BD Horizon Brilliant™ Violet 480 Reagents

Features

- Reduced spillover into BV605, BV650, BV711 and BUV496 channels
- Brighter alternative to BV510 reagents
- Optimal for panels containing multiple colors on the violet laser

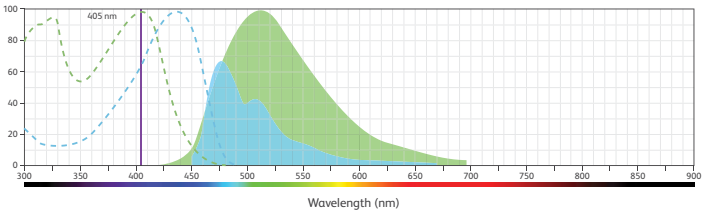

Figure 1. Excitation and emission spectra of BV480 (blue) and BV510 (green)

BD Horizon Brilliant™ Violet 480 (BV480) was developed exclusively by BD Biosciences to optimize panels using multiple dyes on the violet and UV lasers. This dye is detected in the same channel as BV510, but has less spillover into neighboring channels, making it more optimal for multicolor flow cytometry.

BV480 reagents help optimize the violet laser for reduced spillover

BV480 is a polymer dye that has a maximum excitation of 436 nm and emission peak at 478 nm (Figure 1). BV480 can be detected in the same filter as BV510 (for example, 525/40) and used as an alternate to BV510. Since BV480, BV510 and BD Horizon™ V500 have similar excitation and emission properties, they cannot be used simultaneously. Due to its emission profile, BV480 has less spillover into the BV605, BV650 and BV711 channels when compared to BV510 (Figure 1, Table 1). Due to its excitation profile, BV480 will have less cross-laser excitation with the UV laser, resulting in less spillover into UV channels than BV510. The spillover advantages make BV480 an optimal choice for panels using multiple reagents on the violet and UV lasers.

Since BV480 is slightly blue shifted compared to BV510, it will have increased spillover into the BV421 channel. However, the amount of spillover is very manageable and can easily be corrected through compensation. To significantly reduce spillover into the BV421 channel from BV510 and BV480, a 431/28 filter can be adopted for the BV421 channel (Table 1). Although not necessary, this filter change will improve multicolor data for panels containing BV421 and BV480 or BV510.

Brighter than BV510 reagents

In addition to the reduced spillover, in most cases BV480 will provide a brighter alternative to BV510 (Table 2, Figure 2). The increased brightness of BV480 makes it a better choice for resolving dim markers.

		Spillover into channel filter								
		BV421		BV605	BV650	BV711	BUV496	BUV563	BUV661	FITC
Reagent		431/28*	450/40	610/20	660/20	710/50	515/30	562/40	670/30	530/30
Hu CD3	BV480	0%	13%	19%	5%	2%	12%	5%	1%	5%
	BV510	0%	6%	50%	18%	10%	21%	19%	8%	3%
Hu CD4	BV480	0%	13%	19%	5%	2%	12%	5%	1%	5%
	BV510	0%	6%	51%	18%	10%	21%	18%	8%	2%
Hu CD19	BV480	0%	13%	19%	5%	2%	12%	5%	1%	5%
	BV510	0%	6%	51%	18%	10%	21%	19%	8%	3%
Hu CD28	BV480	0%	13%	19%	5%	2%	12%	5%	1%	5%
	BV510	0%	6%	52%	19%	11%	21%	18%	8%	3%
Hu CD56	BV480	0%	13%	19%	5%	2%	12%	5%	1%	6%
	BV510	0%	6%	51%	19%	11%	22%	19%	8%	4%

Table 1. Reagents of the same clone in various formats tested side by side to evaluate spillover
This table is meant to show a relative comparison between dyes, since spillover values can vary depending on the filter used and PMT voltage.
*Filter obtained from Chroma®. Note that this filter is optimized for BV421 and will be suboptimal for Pacific Blue™ or BD Horizon™ V450.

		Stain index	
Target	**Clone**	**BV510**	**BV480**
Hu CD3	UCHT1	186	451
Hu CD4	SK3	77	158
Hu CD11c	B-ly6	4	10
Hu CD28	CD28.2	19	41
Hu CD56	NCAM16.2	39	67
Hu CXCR5	FR8B2	29	55

Table 2. Reagents of the same clone in various formats tested side by side to evaluate the stain index

Consistent from lot to lot

As with all BD reagents, a high level of quality ensures reproducible results through minimal lot-to-lot variability. During development, three lots of the BV480 dye were tested to ensure lot-to-lot consistency. The BD Horizon™ BV480 reagents have minimal lot-to-lot variability and excellent consistency (Figure 3).

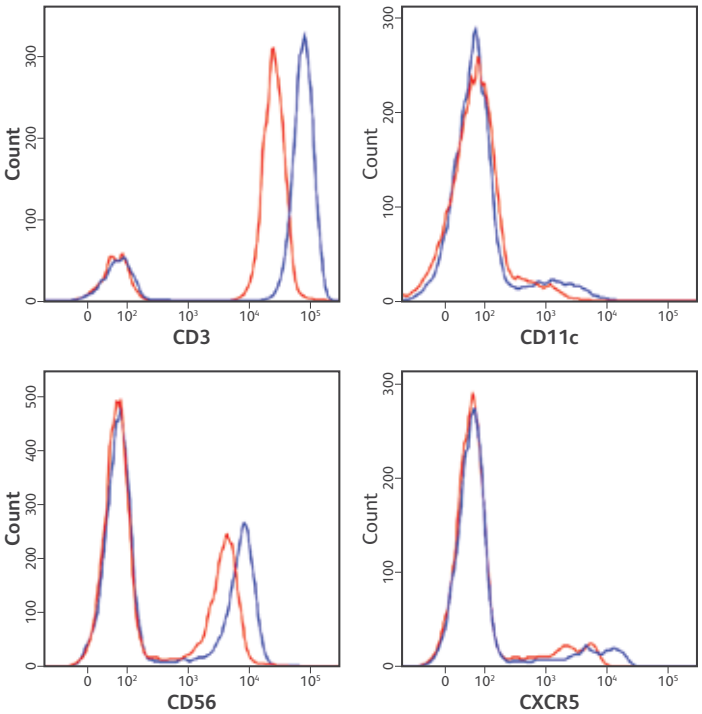

Figure 2. Lysed whole blood stained with Hu CD3, CD11c, CD56 or CXCR5 conjugated to BV480 (blue) or BV510 (red)

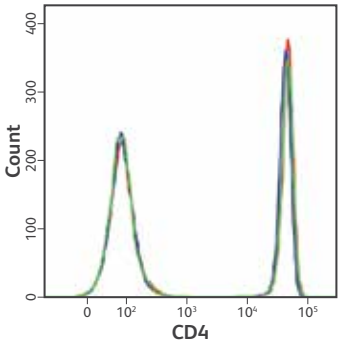

Figure 3. Data from three lots of BV480 conjugates

Three different lots of BV480 dye were conjugated to Hu CD4. The conjugates were run side by side, and staining is shown on lymphocytes (Lot 1: Blue line, Lot 2: Red line, Lot 3: Green line).

Selection of human BD Horizon BV480 reagents

Ordering information			
Description	Clone	Size	Cat. No.
CD3	UCHT1	25 Tests	566166
		100 Tests	566105
CD4	SK3	25 Tests	566165
		100 Tests	566104
CD11c	B-Ly6	25 Tests	566184
		100 Tests	566135
CD19	SJ25C1	25 Tests	566164
		100 Tests	566103
CD28	CD28.1	25 Tests	566173
		100 Tests	566110
CD45RA	HI100	25 Tests	566155
		100 Tests	566114
CD56	NCAM16.2	25 Tests	566162
		100 Tests	566124
CXCR5	RF8B2	25 Tests	566191
		100 Tests	566142

Selection of mouse BD Horizon BV480 reagents

Ordering information			
Description	Clone	Size	Cat. No.
CD8α	53-6.7	25 µg	566096
		50 µg	566169
CD11b	M1/70	25 µg	566149
		100 µg	566117
CD19	1D3	25 µg	566167
		100 µg	566107
CD25	PC61	25 µg	566202
		100 µg	566120
CD44	IM7	25 µg	566200
		100 µg	566116
CD45.2	104	25 µg	566077
		100 µg	566073
CD117	2B8	25 µg	566081
		100 µg	566074
IgD	11-26c.2a	25 µg	566199
		50 µg	566106

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